AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs [01] - [08] with the following paragraphs.

~~Field of the Invention~~

BACKGROUND

Field of the Invention

[01]   This application relates generally to the sharing of data structures, and more particularly relates to systems and methods for sharing of execution plans for similar database statements.

~~Background and Summary~~

[02]   In modern relational database management systems (RDBMS), the overhead associated with processing client requests can be significant. Cache and buffer overflow, I/O bottlenecks, wasted CPU cycle time, shared memory latch contention, network throughput, and other performance side effects often result from poor planning and untested design.

[03]   To avoid these and other by-products of a poorly designed system, a client/server DBMS architecture could benefit greatly from a streamlined database statement processing system. In a typical two-tier DBMS architecture, a client issues a database statement (hereinafter illustratively referred to as a "SQL statement") to a process running on the database server through a proprietary or open-system call level interface (CLI). The server expends a great deal of its run-time resources in parsing the request, creating an execution tree, semantically analyzing the statement, and determining an optimal execution plan. These steps together constitute the compilation, or "hard parse,"

steps needed to store and create a cursor in cache memory before the server can effectively carry out a client request or return a result set.

[04]   It would be highly desirable to implement a process and system for conserving system resources and reducing the overhead/expense of processing SQL statements. Conserving system resources means avoiding, where possible, the redundant processing of client SQL statements. While a DBA can accomplish some performance enhancement via run-time parameter adjustment, often the parameters available to the DBA are not tailored specifically to execution plan reuse.

[05]   The systems and methods for sharing of execution plans for similar SQL statements, according to embodiments of the invention, minimize or eliminate the inherent limitations and drawbacks of current SQL processing techniques by permitting a SQL statement issued from a client to reuse a cursor pre-compiled for a similar SQL statement.

SUMMARY

[06]   In one embodiment, the systems and methods for sharing of execution plans comprises the following system components: a search engine, a cursor sharing monitor, and a compiler. The search engine searches the shared memory pool for a pre-existing cursor built from similar SQL text that matches the text of the issued SQL statement. The cursor sharing monitor invokes and monitors execution plan reuse if a match is found, or if a match is not found and the previously mentioned configurable system parameter is configured to permit plan reuse. The compiler is responsible for performing such "hard parse" steps (the details of which depend largely upon the particular DBMS

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implementation) in the case of no match found or the value of the configurable system parameter disallows reuse.

[07]   The systems and methods for sharing of execution plans for similar SQL statements reap many benefits, including: enhanced SQL processing performance without costly code revision, a decrease in the number of hard parse compilations that would otherwise be needed, and reduced CPU cycle time and latch contention, to name a few.

[08]   Further details of aspects, objects, and advantages of the invention are described in the detailed description, drawings, and claims.